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CORONARY CALCIFICATION IS COMMON AND MAY BE UNDER-REPORTED ON NON-GATED CHEST CT IMAGING

Poster Contributions
Poster Hall B1
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Session Title: Biomarkers, Hypertension and Lipid Management
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Background: Assessment of coronary artery calcium using dedicated computed tomography (CT) is a validated cardiac risk assessment tool. The presence of a non-zero calcium score indicates higher risk of events. Our aim was to retrospectively assess non-cardiac chest CT studies of patients 35 years and older for coronary calcification.

Methods: Non-gated chest CT images of 304 patients from 1/1/2012 to 1/1/2013 were reviewed by two independent readers blinded to all clinical information. Original clinical CT reports were reviewed for coronary calcium reporting. Demographics and medical history were obtained from charts.

Results: Coronary calcification was identified in 204/304 (68%) chest CTs. Patients in whom calcification was identified were older, had more hyperlipidemia, smoking history, and known CAD or prior MI. Among those with calcification, 97% had LAD and or LM involvement, 43% were on aspirin, 62% on statin medication. Coronary calcification was identified in the report for 69% of studies with calcium. Calcium was more likely to be reported if present in the left circumflex artery or if more vessels were affected.

Conclusion: We found a high prevalence of coronary calcium on non-cardiac chest CTs. In this population of patients with significant cardiac risk factors (age, hyperlipidemia) standard reporting of the presence of coronary calcium may provide an opportunity for more focused risk factor assessment and management for referring providers.

Table 1. Comparison of characteristics between patients with calcium on chest CT and without calcium on chest CT.

Characteristics	All (304)	Any Calcium (204)	No Calcium (100)	*p*-Value
Age (mean, years)	70.7±9.6	73.6±8.8	64.8±8.6	<0.001
Female, n (%)	190 (62.5)	120 (58.8)	70 (70.0)	0.059
Non-White, n (%)	32 (14)	17 (11.3)	15 (19.5)	0.091
BMI (mean, kg/m^2)	27.1±6.1	27.1±6.7	27.1±5.8	0.960
Any Smoking History, n (%)	167 (59.9)	118 (64.1)	49 (51.6)	0.043
Comorbid Conditions, n (%)				
Hypertension	129 (44.6)	72 (37.5)	57(58.8)	0.001
Hyperlipidemia	165 (56.9)	124 (64.6)	41 (41.8)	<0.001
Diabetes mellitus	62 (21.4)	45 (23.4)	17 (17.3)	0.231
Chronic kidney disease	40 (13.8)	26 (13.6)	14 (14.3)	0.875
Family history of cardiac disease	55 (19.9)	42 (23.1)	13 (13.7)	0.063
Coronary artery disease or prior MI	27 (12.5)	24 (12.5)	3 (3.1)	0.009
Peripheral artery disease	12 (4.2)	9 (4.7)	3 (3.1)	0.505
Prior CVA or TIA	12 (4.1)	11 (5.7)	1 (1.0)	0.057
Meds, n=290 (%)				
ASA	112 (38.6)	82 (42.7)	30 (30.6)	0.083
Statin	151 (52.1)	118 (61.5)	33 (33.7)	<0.001
B-Blocker	105 (36.2)	84 (43.8)	21 (21.4)	<0.001
Other Lipids	25 (8.6)	16 (8.3)	9 (9.1)	0.730

Characteristics	Calcium reported (139)	Calcium not reported (65)	*p*-Value
Age, years	73.7±8.8	73.4±8.9	0.816
Female (%)	83 (59.7)	37 (56.9)	0.706
Non-White n (%)	37 (26.6)	19 (29.2)	0.599
Prior CT, n (%)	58 (41.7)	35 (53.8)	0.098
Chest CT Indication, n (%)			0.528
Lung/mediastinal abnormality	95 (68.3)	41 (63.1)	
Pulmonary malignancy	20 (14.4)	13 (20.0)	
Other indications	23 (16.5)	10 (15.4)	
Dominant Extracardiac Findings, n (%)			0.209
Airway Disease	4 (2.9)	3 (4.6)	
Emphysema	16 (11.5)	6 (9.2)	
Ground Glass / Nodules	53 (38.1)	21 (32.3)	
Infectious	11 (7.9)	2 (1.4)	
Lung abnormality	25 (18.0)	10 (15.4)	
Malignancy	2 (1.4)	4 (6.2)	
Mediastinal abnormality	5 (3.6)	3 (4.6)	
Other	6 (4.3)	8 (12.3)	
Post-Op	16 (11.5)	6 (9.2)	
Prosthesis	1 (0.7)	2 (3.1)	
Vessels with calcium, n (%)			
LAD & LM	136 (97.8)	61 (93.8)	0.144
RCA	78 (56.1)	28 (43.1)	0.082
LCx	77 (55.4)	19 (29.2)	<0.001
Number of vessels affected, n (%)			0.002
1	41 (29.5)	35 (53.8)	
2	44 (31.7)	17 (26.2)	
3	54 (38.8)	13 (20.0)	